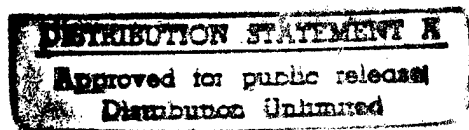


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JPRS 82619

11 January 1983



USSR Report

ECONOMIC AFFAIRS

No. 1034

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11 January 1983

USSR REPORT ECONOMIC AFFAIRS

No. 1034

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ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

SWISS PAPER CITES FRG STUDY OF SOVIET ECONOMY

Zurich NEUE ZUERCHER ZEITUNG in German 27 Nov 82 p 15

/Text/ According to a report issued by the Federal Institute for Eastern and International Studies in Cologne (author: Hans-Hermann Hoehmann), the new Soviet leadership is likely in the field of economics also to continue with "Brezhnevism without Brezhnev," because the currently critical economic situation and the economic structure created in past decades are bound to restrict Andropov's scope for action, even if he--and this is distinctly doubtful--were willing to strike out in new directions.

No Profound Changes

On the other hand the report by no means excludes the possibility that the Soviet economy, despite the continuity compelled by its structure, will carry certain new accents displaying the influence of Yuri Andropov. For instance, an attempt is certainly going to be made to replace the present "economics of muddling along" by administrative planning backed by communist ethic, modernized and, to some extent, less restricted but at the same time more disciplined. Profound economic reforms are out of the question. We may expect some lowering of unduly ambitious plan targets such as characterized the Eleventh Five-Year Plan (1981-1985), which turned out to be impossible of fulfillment. Still, investment growth will probably be emphasized so as to eliminate some of the current bottlenecks. Also to be further pursued are the efforts to improve farming.

In general, though, these measures by the Soviet leadership will have to cope with two basic obstacles: First: No resources are available for a profound redistribution in terms of economic sectors and regions. Secondly the basic institution of administrative planning may not be touched in the foreseeable future. The question remains of supplementation by foreign trade. To quite some extent it will depend on Western politics whether world trade oriented cooperation concepts or Bloc centered autarchic trends are to move to the fore.

From Dynamism to Immovability

The beginning of the Brezhnev era (1964) saw a notable economic upsurge following the economic chaos of the last Khrushchev years. The end of the same era features torpor in a dual meaning. The dynamism of economic development has slackened considerably, due to the coincidence of long-range trends of stagnation and new

expenditures, possesses at the present stage primary importance. This was especially noted at the 26th CPSU Congress and reflected in a decree of the party and the government of 30 June 1981 "On Intensifying Work on Economy and Rational Utilization of Raw-Material, Fuel-and-Power and Other Material Resources."

The search for rational methods of analysis and calculation of an actually existing indicator of production cost as a whole and of its most important constituents at the ministerial level led to investigation of the possibility of employment for these purposes of the reporting intersectorial balance of production and distribution of industrial production (MOB [intersectorial balance]) of the USSR Central Statistical Administration and primary information for its development.

The urgency of this investigation is also increased by the consideration that annual working out of the balance requires serious efforts, material and financial resources, though the sphere of its use so far has been most limited. At the same time, the reporting intersectorial balance in our view can serve as an important source of additional information capable of significantly enriching the analysis of production cost and expanding its framework. It makes it possible to carry out a fuller and deeper study of economic processes and most important tendencies and conditions of the functioning of a specific ministry, directly or indirectly influencing the shaping of actual production cost without whose knowledge the development of a scientifically based plan becomes hampered.

The reporting intersectorial balance makes it possible to determine the relative share of manufactured products put out by the ministry, including profile, and to determine the connection between the ministry and a pure sector of industry and the ministry and the operational sector as well as to evaluate its participation in the formation of social costs of production. As a result, the obtained information could serve as the basis for the working out of a general direction of development of this or that ministry, improvement of establishment and planning of intersectorial ties, the solution of a number of economic problems pertaining to specialization and cooperation, increase of labor productivity, optimization of production volume and structure and consequently exert a direct influence on the level, dynamics and makeup of production cost.

The reporting intersectorial balance provides the possibility of analyzing the dynamics of interrelations existing between user-ministries and supplier-ministries and showing how their use is reflected in the level of actual costs. Moreover, the dynamics of interrelations of different sectors can characterize the change in the degree of progressiveness of production, that is, in the use of scientific-technical achievements, the level of use of economical forms of material resources, introduction of advanced methods of labor organization and so on.

By way of illustration of what has been said, it is possible to present the result of the computation we made of the structure and dynamics of outlays on production for the Ministry of Automotive Industry on the basis of annual intersectorial reporting balances for 1975-1979. The total growth rate of

disproportions. In view of stalled economic structures and immovable bureaucratic apparatuses, state planning too lost the controlling impetus. Arising as a result of declining controls and poor economic morale was the antisystem of sideline capitalism, the "underground economy."

From 1965 to 1982 the Soviet gross national product has grown by a 4.3 percent annual average. As the United States was able to achieve no more than a 2.9 percent annual growth, the size ratio between the Soviet and American gross national products shifted from a little more than 45 percent to almost 60 percent. Per capita consumption rose by 3.3 percent annually. The USSR's military strength rapidly expanded and ensured its ascension to international parity as a superpower ranking with the United States.

Unsolved Problems

If we consider the Brezhnev era from the aspect of its ending, unsolved problems tend to assume prime importance. The distance from the standard of development of leading industrial countries is still far too great. Economic growth is largely on the decline and further damaged by defects with regard to both quality and range. In 1982 agriculture recorded the fourth consecutive harvest failure. The people's standard of living is stagnating, and even industry--the prize exhibit of Soviet economic development--is nearing a low point of growth this year. However unfavorable the crisis-like situation now, prospects for the future are not much better: Capital, manpower and raw materials are increasingly short; the breakthrough to improved productivity, alone able to ensure the return to higher economic growth rates, is simply not happening.

Brezhnev had not succeeded in achieving his ambitious goals in the economic sector. Though output rose substantially in agriculture, for example, the plans usually failed to be met by a fairly wide margin, and the turn of the 1980's witnessed several harvest failures, resulting in the need for extensive grain imports and persistent disruptions of supplies. Nor was he successful in modernizing industry. It was not even possible to carry out the intended switch toward consumer goods production. A significant defect was the neglect of any move toward intensive economic development, that is development directed to the improvement of available production capacities. Admittedly the Soviet Union managed at least in part to balance the inadequate improvement in productivity by the increased deployment of capital, manpower and raw materials. If it had not done so, the Soviet economy would long ago have entered a stage of even weaker economic growth. Still, at the beginning of the 1980's all the potential for the resolute deployment of traditional production factors had been exhausted.

"Reform of the Reform"

The Brezhnev era did succeed in noticeably opening the USSR to foreign trade with the Western industrial countries. At the present time, though, economic and political factors--Soviet delivery weakness, recession in the West, reduced Western credit availability and international tensions--prevent another rapid growth of trade with the West. Moreover the Soviets have come to increasingly doubt the political and economic benefits of unduly expanded economic cooperation. Nevertheless Moscow remains interested in cooperation with the Western countries.

Considered from the long-range aspect, the 1965 economic reform was not successful. Continued efficiency and growth problems therefore caused the leadership to change it into a continuing process of something like "the reform of the reform," talking in this context of the "perfection" and "improvement" of the economic mechanisms. Planning by directive at enterprise level was not replaced by the horizontal coordination of enterprise operations by way of contracts (introduction of market mechanisms).

Far reaching market socialist oriented reforms are therefore likely in future also to be more restricted in the USSR than in the smaller communist countries of Eastern Europe. This means that we may not expect fundamental improvements in the efficiency of economic operations. However, progress is quite possible in some areas, and the new leadership will probably place some of its hopes in such advances.

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CSO: 1826/8

INVESTMENT, PRICES, BUDGET AND FINANCE

USE OF INTERSECTORIAL BALANCES FOR PRIME COST ACCOUNTING DETAILED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 10, Oct 82 pp 84-89

[Article by G. Sokolavskaya, head of sector of the Scientific-Research Institute of Planning and Norm Setting attached to Gosplan USSR, and A. Kon'shina, senior scientific associate: "Use of the Intersectorial Balance for Calculations of Production Cost"]

[Text] The wide use of production cost in economic practice and its return to the status of a basic planning and estimating indicator of the operation of production units as well as the growing role of expenditures in calculations of wholesale prices and efficiency of public production provide extreme pertinence to questions of improvement of existing and introduction of new methods of calculation of the said indicators at all levels—from enterprises to ministries.

At the present time, a methodology of computing production costs of enterprises has fully taken hold and is satisfactory. At the same time, it is least developed at the ministry level. Ministries do not have at their disposal a sufficiently serious tool for the control and analysis of the attained level of production expenditures and of their structure and validation of planned production cost.

Indicators of sector production cost comprise both integral and weighted mean (outlays per ruble of commodity production) values of indicators of enterprises. The lack of a deep and all-round analysis of actual production cost is one of the reasons for the fact that the plan for ministries is set for them without consideration of economic factors and developmental tendencies on the basis of the existent rate of reduction or of the attained level of production cost, that is, through the extrapolation of basis conditions for the plan period. A list of factors is practically absent and consequently their consideration in the construction of a plan indicator of production cost at the level of the sector. In a number of ministries, factor analysis of costs is in general not made, while there where factor planning is carried out, it boils down essentially to the same summation of data by enterprises.

It should be especially emphasized that the ministries do not have a reliable data base for the analysis of the actual and validation of the planned level of material outlays—an item with the biggest relative share in the composition of production expenditures of all sectors of the processing industry. At the same time, reduction of production cost, primarily through economy of material

expenditures in these years amounted to 144.8 percent, while its individual forms changed irregularly. As a result, the structure of expenditures was changed; the relative share of wages in the total volume of expenditures on production grew 6 percent, the share of amortization increased from 7.6 to 9.2 percent, while the share of material expenditures, on the other hand, was reduced from 79.3 to 71.7 percent. In this connection, data characterizing the dynamics of the last-named type of expenditures are most interesting. Thus, the growth rate of use (in cost terms) of products of the chemical industry for the five years reached 126.1 percent, of nonferrous metallurgy--113.5 percent, of coal--160.9 percent and of petroleum--125 percent.

The task here is not of determination of the concrete reasons for such changes, although it is possible to note in general terms that they attest to reduction of material intensiveness of production, growth of labor intensiveness and of the capital-labor ratio; they also reflect the effect of measures in the sector on regulation of wages, amortization deductions and prices for machinery and equipment. The essence of the question is for the ministries for whom in principle disclosure of these reasons presents no great difficulty to possess such data and to use them in current work on the adoption of plan decisions. Some processes can already be characterized now. Thus, a change in the structure of individual material resources for the Ministry of Automotive Industry, particularly in the direction of expanded use of coal with curtailment of the share of petroleum and gas raw materials under present conditions speaks of progressive changes in the sector and the possibility of further reduction of its production cost in the same way as replacement of products of ferrous and nonferrous metallurgy with products of the chemical industry.

All this should undoubtedly be considered not only as interesting and important information on the shaping of sectorial production cost and on factors influencing it. Such information is necessary in the evaluation of plan fulfillment according to the indicator of production cost on the ministerial level with the aim of objective characterization of the quality of management and discovery of additional reserves for reduction of production expenditures.

One of the most important advantages provided by the use of intersectorial balances is the possible of detailed analysis of the structure of material expenditures included in production cost. The statistical reporting existing at the present time in the ministry and at enterprises, despite the broad range of indicators encompassing it, nonetheless does not contain information required for the study of elements of outlays with detailed itemization of their individual forms. Thus reporting on the cost of manufactured products and production costs is compiled on the basis of items of calculation and combined elements of expenditure without them being broken down for individual forms of raw and other materials, fuel and so on. The statistics of material-technical supply also does not make it possible to obtain all the required information on the structure of material expenditures.

MOB is one of the chief sources for obtaining of these data. The principle of distribution of costs by elements lies at the basis of this construction as well as of the form of statistical reporting "Outlays on Production." But in this form all material expenditures (used objects of labor) are grouped according to five elements, while the insectorial balance has 16 positions for their

expenditure. In addition, the form of the USSR Central Statistical Administration for the development of the intersectorial balance "Form of Simultaneous Accounting of Expenditures for Production Output," sent out for filling in by enterprises, contains 103 such positions. In the connection, the importance is increased of the practical utilization of the reporting intersectorial balance and primary data for its development for speeding up the realization of the decisions of the above-mentioned decree of the CPSU Central Committee and the USSR Council of Ministers.

In our opinion, it is possible with the aid of intersectorial balances to compute the indicator of the limit of material expenditures and, in addition, if necessary, to compute it for individual material resources (regardless of their use).

In the instructive letter of Gosplan USSR, USSR Ministry of Finance and the USSR Central Statistical Administration, approved 30 June 1982, "On a Procedure of Establishing in Five-Year and Annual Plans for Industrial, Construction and Transport Ministries, Associations, Enterprises and Organizations Targets for Cost of Production (Work) and as Part of These Targets the Limit (Maximal Level) of Material Expenditures and on Evaluation of Fulfillment of These Targets" attention is especially stressed on the need to provide a high technical-economic basis for the approved limit (maximal level) of material outlays. This is proposed to be particularly reached on the basis of calculations of material outlays based on the need of material resources for production needs in accordance with progressive norms of their expenditures determined with consideration of the established targets for average reduction of expenditure norms; replacement of traditional forms of resources with new progressive forms; consideration of effect of production structure change on material outlay level; careful analysis of the composition and dynamics of material expenditures.

As has already been shown above, the intersectorial balance makes it possible to successfully solve the last-named problem, but besides this it can also be useful in the resolution of any of the enumerated problems. The fact is that the method of working out an intersectorial balance in its nature is close to the normative method of calculation and planning of economic indicators. The coefficients of direct material and labor expenditures used for the construction of intersectorial balances may be considered as consolidated norms; in particular the coefficients of direct material expenditures constitute the expenditure of production of one sector per ruble of gross production of another sector. In the course of determination of plan coefficients of expenditures, targets are taken into account for average reduction of norms of expenditure, and, with the development of the actual balance, the linkage is ensured of the volume of production output to the need for the total volume of material resources and each concrete type individually.

As for taking into account the effect of a change of production structure, here the following should be noted. The use of intersectorial balances makes it possible without any special difficulty to carry out alternative calculations of the indicator of production cost and to include in it the amounts of material expenditure, including and taking this factor into consideration. Moreover, the intersectorial balance can contribute to acceleration of introduction into production of progressive types of raw and other materials, since the level of their use is thus graphically shown, which provides the possibility for

personnel of planning administrations of ministries to evaluate the relation of the size of production cost (its reduction) on the volume of use of economical raw and other materials in production.

The reporting intersectorial balance can be not only a source of analytical information but also an initial document for calculations of the indicator of production cost of industrial ministries. But here certain limitations exist that are connected with the fact that the balance is worked out not for all but for 28 of the ministries (although they are leading ministries). The difficulty lies in something else. It is not possible to determine directly the indicator of production cost by means of selection (from the first and third quadrants) and direct summation (from the balance column) of data on expenditures of material, labor resources and other items corresponding to the items of expenditures of the given ministry. As a result of such addition, it is possible to obtain the size of production expenditures. In this connection, correction of a number of balance items will be required. Thus there should be deducted from the totaled sum of the column of the first quadrant expenditures on freight transport and material-technical supply, trade and procurement, constituting outlays by the sector for payment of the services of freight transport and markups (markdowns) of supply-sale organizations. They are connected with the realization and sale of produced output and are not included in factory-plant production cost. Incidentally, may we point out that current material expenditures, as is known, are formed in the 1st quadrant of the balance; consequently outlays of sectors on payment for the services of transport and material-technical supply after deduction of transport expenditures included in the production cost would be more advantageously shown in accordance with the stage of price formation after obtaining the total for the sum of products in wholesale prices of enterprises of the 3rd quadrant of the intersectorial balance.

In the "Amortization" line of the balance there is shown the sum not only of the charged amortization but also of the not yet amortized part of the cost of eliminated fixed capital. At the same time, in computing items of expenditures for production output just as in calculation of production cost, this item should include only the sum of charged amortization. The nonamortized cost of fixed capital in the production cost of manufactured products is not considered; consequently it should be excluded from the "Amortization" line.

The situation is more complicated with the part of net revenue which in conformity with adopted practice is included in the cost of production and is reflected in the balance line "Other Elements of Net Revenue" (expenditures on cadre training, rent payments and so forth). Here additional calculations are required.

The indicated corrections in our opinion would help in reflecting more accurately in the actual intersectorial balance the level of material expenditures in the cost of production of individual ministries.

Accordingly, it may be said: the existing model and data of the reporting intersectorial balance of the USSR Central Statistical Administration consists of rich analytical material, which it is necessary to use at ministries both at the stage of summing up and in planning of the indicator of production cost.

The direct use of the reporting intersectorial balance is also possible for calculating such an indicator at the ministerial level. At the same time, broader possibilities are opened by the employment for these purposes of the initial information obtained from the USSR Central Statistical Administration and of adopted methods of working out the balance.

The initial information for compilation of the intersectorial balance is contained on special forms of the USSR Central Statistical Administration, particularly on the "Form of Simultaneous Accounting of Expenditures on Production Output." These documents should evidently be evaluated from the point of view of volume, reliability and economic nature of the contained indicators. The latter is especially important so as not to permit inclusion in sectorial production cost of expenditures of a nonproduction character and others not applicable to inclusion in its makeup.

The scope of information in the Form is much greater than in the actual balance. This applies not only to material expenditures. There is a breakdown of such expenditures as "other monetary expenditures," which include deductions for geological prospecting work, outlays for guaranteed services and guaranteed repairs; "other types of material expenditures," where among others there is mentioned payment by number of trees cut down; there are provided on individual lines payment for work, services and other expenditures on current repair of equipment performed by outside specialized enterprises. The breakdown of such expenditures is of special interest at the present time in connection with the calculation of the limit of material expenditures inasmuch as its composition should include such expenditures.

Annual statistical reporting on production cost does not contain a breakdown of the said expenditures, which not only presents difficulties for calculations of the limit of material expenditures but also prevents the discovery of reserves of economy to be found here even at the enterprise level, not to speak of the sector.

There can be no doubt about the reliability of the data contained on the Form. In any case, their accuracy is no lower than those which are used in calculations of the indicator of production cost by existing methods, since the majority of them are based on indicators of primary accounting of industrial enterprises.

The Form for Simultaneous Accounting of Outlays for Production Output contains data on the volume and expenditures on the production of all and individually profiled production, unfinished production, semifinished products of own manufacture, size of industrial-production personnel, including those employed in the manufacture of products corresponding to the sectorial profile. The Form concentrates in itself information that is dispersed at the present time among different reporting documents or determined through calculation with data of primary accounting, which subsequently is not shown anywhere. This document provides the possibility of conducting a detailed and thorough analysis of the indicators of production outlays at all levels--from enterprise to ministry. On the basis of its data, it would be possible to compute not only individual expenditures and production cost as a whole but also to utilize them in

assessing the quality of operation of economic units as they illustrate the influence of a number of intraproduction and sectorial factors, which in turn can help find ways of further reducing production cost. Thus, at the ministerial level, it can be graphically seen how all of its expenditures of profile and nonprofile production (as a rule, with higher production costs) are distributed; this can serve as a reason for intensification of the process of specialization of the given department and rationalization of the distribution of the production program among enterprises, usually resulting in reduction of sectorial production cost. The possibility also arises of determining the size of labor outlays on the production of profile products. This can also be used for the elucidation of the dependence of the size of the costs of its production on labor productivity and also serve as a basis for working out measures for improving its organization, which is an important source of economy of production expenditures.

Let us also direct our attention to the fact that ministries will have at their disposal arriving information aiding them to determine the influence of a change in unfinished production on the level of all expenditures and the cost of finished production. Such data are helpful in solving problems of reducing the production cycle through improvement of technology and organization of the production process, which presupposes reduction of expenditures in manufacture of products.

At the present time, established procedure does not provide for the participation of a ministry either in the development or in the use of such valuable examined information. Measures for obtaining it are carried out by production associations and independent enterprises, that is, base elements of operation of industry possessing the status of a legal entity. They do organizational work in their subdivisions and prescribe a procedure and methods of obtaining indicators on the basis of requirements and instructions of the USSR Central Statistical Agency. The Form of Simultaneous Accounting of Expenditures on Production Output is presented by enterprises and associations to statistical administrations of oblasts (krays, ASSR) in two copies, one copy which is kept.

The fact should be especially emphasized that the filling in of forms for the working out of intersectorial balances involves the performance of rather difficult and laborious work: selection of data from primary documents of material accounting, bookkeeping and analytical accounting, warehouse accounting cards (requirements, invoices, limit cards) as well as of acts for writing off as expenditure of materials, calculations, monthly reports on remainders, receipt and expenditure of raw and other materials and the like from calculations of enumeration of wear of tools, inventory of little value, special work clothing and other documents.

In order to have information on production expenditures for the reporting period for individual varieties of raw and other materials, fuel, components and the like, enterprises and associations should with the beginning of the reporting period group material expenditures for all the shops (both basic and auxiliary) within the framework of the products list of sectors indicated in the Form. Equipment and methods of obtaining and developing information on the use of individual types of raw and other materials and so forth at different

enterprises vary and depend on methods of computation of production expenditures and accounting of physical assets used at a specific enterprise. No standard recommendations exist in this regard. The processing of such information requires the application of serious efforts by workers not only of the bookkeeping office and the economic-planning department of enterprises but also of the production department and the departments of the chief mechanical engineer, the chief power engineer, material-technical supply and others.

The ministry, however, is deprived of the possibility of making use of the said information in planning and analytical work in general and in calculations of production cost in particular. In our view, it is necessary to establish a procedure in which one copy of the forms of the USSR Central Statistical Administration for development of intersectorial balances would be provided to the ministry. This, on the one hand, creates conditions for calculation and analysis of the indicator of production cost on the basis of the intersectorial balance at the ministerial level without additional expenditure of effort and funds and, on the other will help strengthen control over timely and conscientious performance of this work by enterprises and production associations, which is also very important, since the optional direction of the said information at a higher organization gives rise in a number of cases, as shown by research, to an inattentive attitude towards its quality. It would appear to be useful in this connection to make the ministry responsible for carrying out and organizing inquiries for filling out of the corresponding forms with the use of highly qualified cadres.

The conducted analysis showed that with the availability of the above-considered information (data of the Form), it is quite simple to compute the indicator of actual production cost on the basis of the intersectorial balance in the ministry.

The examined methods make it possible to determine a number of indicators characterizing production costs at the ministerial level: production expenditures, gross production cost, commodity production cost. The indicator of expenditure per ruble of commodity production is determined on the basis of the last-named. At the same time, it is possible to expect that the accuracy of calculations grows, inasmuch as the "direct count" reduces the probability of a subjective error.

In our opinion, the given indicators could be used as reporting indicators for industrial ministries. But this is provision and calls for experimental verification.

It seemingly would be practicable to use the intersectorial balance and the information for its development in plan calculations of production cost. We wish to point out that plan intersectorial balances can serve only for the disclosure of general patterns, developing tendencies in the forming of production costs, since they are developed in the context of pure sectors; a model of a real-cost [natural'no-stoimostnyy] balance is little suited for such purposes because of the fact that it does not encompass the entire products list for the ministry. At the same time, the reporting intersectorial balance, as was shown, helps in the compilation of a plan for the indicator of production cost to take into

consideration factors operating at the sectorial level. For example, to determine the degree of influence of cooperation and specialization of enterprises on the level of production cost and with its makeup--on the size of material expenditures as a whole and for individual kinds; to determine the dependence of production cost and material expenditures on different variants of allocation of the production program for associations and enterprises of the given ministry. But this does not exhaust the importance of the reporting intersectorial balance to planning of production cost. With it, it is possible to obtain base coefficients of direct expenditures on whose basis pertinent plan coefficients are computed (with use of the correction method). With their aid, the plan production-cost indicator is determined for a specific sector.

As shown by the investigation, all the necessary information for correction of coefficients and subsequent computations of production cost is available at ministries, while experience of computing such coefficients for the plan balance has been accumulated at many sectorial scientific-research institutes. Calculations carried out on the basis of the data of 1977 (the last year of the surveys conducted by the USSR Central Statistical Administration for the development of intersectorial balances on the basis of the full range of indicators with the filling out of the Form) disclosed quite high accuracy for the method under consideration. Thus for the group of Leningrad enterprises of the Ministry of Machine Building for Light and Food Industry and Household Appliances, the significance of a plan indicator for 1978 was computed by this method and was found to be lower than that approved for this year of the plan and was closer to the actual level of production cost; deviation was less than 0.3 percent. Only the most important coefficients of direct material expenditures were subjected to correction, including those of ferrous and nonferrous metals (the correction involved the use of planned percent of reduction of norms of their expenditure, metal products of production designation and products of the electrical equipment industry (this was corrected with the help of expert estimates).

Even more interesting results were obtained for the Ministry of Automotive Industry. Here the computed plan indicator almost completely coincided with the reporting indicator, which was also below that of the plan by 0.2 percent.

It would seem that computation of plan production cost at the ministerial level should not present any serious difficulties. But in the early stages, while the examined method is insufficiently well assimilated, these indicators like the analytical and auxiliary can be recommended as a certain guideline.

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CSO: 1820/16

REGIONAL DEVELOPMENT

ECONOMIC DEVELOPMENT OF SIBERIA CHRONICLED

Specific Projects

Moscow EKONOMICHESKAYA GAZETA in Russian No 39, Sep 82 p 5

[Article by P.S. Fedirko, first secretary of the Krasnoyarsk Kraykom:
"Siberian Potential"]

[Text] Our kray is increasingly often called a kray of great prospects. And this is really so. Today its industrial products are well known to the whole country. Some 450 large-scale production capacities and facilities were commissioned on the kray's territory in the 10th Five-Year Plan alone. More than 200 of them were introduced ahead of schedule and were of good quality. The Nadezhdinskiy Foundry in Noril'sk is producing, and the next units of the Sayano-Shushenskaya GES will be commissioned ahead of schedule. Plants of the Minusinsk Electrical Engineering Complex are operating, as are large-scale capacity at the Achinsk Alumina Works and the Krasnoyarsk Trailer and Combine plants, Foundry and Aluminum Plant.

Large-scale facilities of the Kansk-Achinsk Fuel-Energy Complex are being created currently. The first unit of the Berezovskaya GRES-1 is to generate energy in this 5-year plan even. A giant engineering complex--the Krasnoyarsk Heavy-Duty Excavators Plant--which by the 60th anniversary of the USSR will have manufactured the first two excavators for work at the KATEK coal pits, is growing in parallel.

One out of every two industrial enterprises here operates in accordance with the new evaluative indicators. All the state contract construction organizations have switched to the settlement of accounts for enterprises whose construction has been completed in full and which have been commissioned in accordance with the estimated costs of the commodity construction product. A system of measures for a further improvement in the management of agriculture and other components of the agrarian-industrial complex and the strengthening of cost accounting on the kolkhozes and sovkhoses in accordance with the decisions of the CPSU Central Committee May (1982) Plenum is being implemented. In a word, the complex process of a refinement of the economic mechanism and an improvement in planning is under way.

By Way of Technical Progress

Nonetheless, of all the comprehensive programs, our party organization gives pride of place in terms of significance to the program of an increase in the efficiency of the use of labor resources. And this is not fortuitous. The reason for this is the special demographic situation which has taken shape in the kray today. It is sufficient to say that the indicator of employment of the able-bodied population has reached 95 percent. Consequently, there can be no question of the enlistment in production of new labor resources of our own.

Of course, the arterial path of the solution of this problem is a reduction in the proportion of manual labor in production, its mechanization and automation, the high organization of modern production and struggle against various unproductive losses of work time. Much has been done in this respect in the kray. Some 1,534 mechanized and 161 transfer lines have been installed and are operating and 718 sections, shops and works have been comprehensively mechanized and automated. Automatic manipulators, whose number at the kray's enterprises has risen to 130, are being applied increasingly. At the same time the kray's communists understand full well that implementation of the program of the comprehensive development of the production forces of the kray is making increasingly high demands on an acceleration of scientific-technical progress.

We speak with pride about the fact that the Nadezhdinskiy Foundry--the most highly mechanized and automated nonferrous metallurgical enterprise in the country--is operating in the North and value highly the work of the collective of the Divnogorsk Low-Voltage Apparatus Plant, which is in the business of the introduction of the achievements of scientific-technical progress the leader in its field. Yet in the first 6 months 14 enterprises, associations and kray administrations failed to fulfill the new technology plan. This also means that locally certain gorkoms and raykoms and party organizations are still approaching the solution of these questions without due responsibility. They must be studied daily.

The comprehensive automation and mechanization being performed at the Noril'sk Mining-Metallurgical and Sorsk Molybdenum works and the Krasnoyarsk Aluminum Plant and Foundry is making it possible, for example, to release a considerable number of people and channel them into the assimilation of new capacity. A large-scale engineering complex is currently taking shape actively on the kray's territory. And the party organizations are giving pride of place here to the problem of the introduction of highly mechanized facilities and production processes.

However, we cannot fail to be disturbed here by the passive position of certain ministries and departments in the business of the modernization of old enterprises and the introduction thereof of progressive labor-saving techniques and equipment. The active part of the production capital of the majority of plants of the kray has not been replaced in the last 10-15 years. It is 10 years now that the USSR Ministry of Petroleum-Refining and Petrochemical Industry has been talking about the modernization of equipment at the

Krasnoyarsk Tire Plant, while in the majority of operations the workers have to engage in heavy physical work. The situation is the same in the Glavmikrobioprom, which has been servicing the Krasnoyarsk Biochemical Plant since 1943, but finds no resources for modernization.

At the Kray's Construction Sites

Krasnoyarsk Kray is quite rightly called a giant construction site. A long list of most important construction projects is incorporated in the documents of the 26th CPSU Congress. How to manage with a smaller number of people and how to increase the pace of construction and reduce its duration?

Our construction workers do have reserves, and considerable ones at that. They are to be found in a refinement of the techniques of the organization of the construction process, an improvement in the engineering preparation, a reduction in equipment down time and in the high plant readiness of products and structures. Programs for the retooling and modernization of construction industry depots have been developed and are being implemented, as is an orientation toward the manufacture of highly efficient precast ferrocement and light metal structures providing for the erection of industrial buildings from large building-engineering blocks, bulk components and structures of increased industrial manufacture in the kray. This approach is leading to the in-depth engineering specialization of general construction work and the creation of organizations which are new in form. For example, as distinct from the existing facilities and those installing just the skeleton of buildings, an experimental plant-building facility of the Glavkrasnoyarskstroy provides for the comprehensive installation of shops from efficient structures with a large degree of readiness of all engineering lines.

The application of progressive methods of modern industrial construction has created conditions for a reduction in the duration of the installation of a number of facilities of the Heavy-Duty Excavators Plant by a factor of 1.7 compared with the norm and ensured the construction workers' high labor productivity. The erection of this giant began in 1979, and its first capacities had been commissioned in 1981 even.

A central question in construction for us is the creation of stable, highly productive labor collectives. A set of measures is being implemented currently for an improvement in the work of the brigades and their reinforcement, the transition from the multi-operation traditional construction process to a process with few operations and the introduction of the start-to-finish contract.

However, other measures are also needed to make the construction specialty more attractive and the construction workers' labor easier and more productive. It is necessary to arm the construction workers with standardized sets of mechanized instruments, machinery and mechanisms capable of reliable operation under the harsh conditions of Siberia. But the construction sites are experiencing an acute need for transit mixers, heavy-duty excavators, large-capacity cranes and machines for working frozen

ground. After all, the use of concrete pumps alone makes it possible to increase labor productivity by a factor of 6-8, and the wheel excavator of the Bryansk Road-Building Machinery Plant replaces 70 single-shovel excavators when working frozen ground. It is just such equipment which the Siberian construction workers are awaiting.

In our view, the Krasnoyarsk construction workers need the active assistance of the USSR Gosstroy and USSR Ministry of the Construction of Heavy Industry Enterprises, Ministry of Installation and Special Construction Work and Ministry of Power and Electrification. These leading construction ministries are erecting in the kray under the severe Siberian conditions large-scale facilities which in national economic significance are comparable to the Kama Truck Plant, the "Atomash" and the Baykal-Amur Main Railroad. And yet such gigantic construction projects are still characterized by losses in time and quality owing to the multitier nature of management and the dispersal of forces and material-technical resources.

The Railroad Workers' Experience

A pretty good example of the efficient use of labor resources is being set by the Krasnoyarsk railroad workers. It has to be mentioned here that the very creation of the Krasnoyarsk Railroad was an important consequence of a refinement of the economic mechanism. And this refinement in the organization of transportation continues today also. Our railroad workers' experience of the transportation of mass freight (coal, iron ore, oil) on enclosed circular routes, which essentially changed fundamentally the techniques of this form of transportation and increased labor productivity considerably, has won general recognition on the country's railroads.

The whole country also knows of the progressive method of the organization of the passage of trains during major overhaul of the track entitled "Openings According to Plan, Trains on Presentation". The transportation of ties in container carriers and trailers on double-deck platforms, the loading of timber into cars with a "cap"--all these are producing big economies in means of transport and considerably reducing labor expenditure.

Everyone knows how much manual labor is still being employed in the repair of railroad track. Here also the Krasnoyarsk railroad workers are tackling successfully the problem of the efficient and productive use of manpower. In recent years alone they have created five track mobile machine stations, in which the level of mechanization in major overhaul of the track constitutes 84 percent, and by the end of the 5-year plan heavy manual labor here will have been completely replaced by mechanized labor, which will make it possible to transfer more than 300 men to other sectors.

The Social Is What Is Most Important

In order to reduce as much as possible losses of work time on account of personnel turnover, the worker's switch from one enterprise to another and unproductive losses caused by other factors it is necessary to create an atmosphere in which people constantly sense a concern for housing conditions,

health, diet and consumer services and have an opportunity for professional growth. The kray party organization has set itself the task of ensuring living and recreational conditions which not only compensate for the difficulties of the harsh climate and distance from the country's main centers of culture but also create a distinctive Siberian type of social attractiveness. A person who arrives here should wish to remain and become a Siberian.

We are tackling this problem in two directions. On the one hand the accelerated construction of housing and the expansion of the material-technical base of sociocultural and everyday life and, on the other, an improvement in the activity and a rise in the efficiency and quality of the work of enterprises of the nonproduction sphere. In the 11th Five-Year Plan we intend to build 8.5 million square meters of housing. This is a very big program for our construction workers. And they must cope with it. It is sufficient to say that 11,000 new apartments with a total area of 511,000 square meters were built in the first 6 months alone.

In recent years many labor collectives of our kray have accumulated solid experience of social planning. The Noril'sk Mining-Metallurgical Works, where the first plan of the collective's social development was compiled back in 1973, could be an example.

Arctic Noril'sk leaves no one indifferent. The city is attractive in its level of social provision. There is practically everything here today for ensuring a person's comfortable life under extreme weather conditions. And in the 11th Five-Year Plan also Noril'sk citizens are continuing to work actively on realization of the social program, in accordance with which it is planned to build and commission 1 million square meters of housing, 25 kindergarten, 10 schools, 3 swimming pools, a consumer service center, a movie theater and health service facilities. This year alone the works' metallurgists and miners will obtain from their subsidiary plots 7,000 tons of milk, more than 1,500 tons of meat, 28 million eggs and 16,500 tons of vegetables and potatoes. The Noril'sk experience of the development and implementation of the "Health 5-Year Plan" comprehensive programs is widely known. A component of the program is the accelerated development of the works' sanatorium-resort facilities.

The Noril'sk party organization is today setting a task of a higher order: switching from social planning to the efficient control of social processes. Such experience is characteristic of all the kray's leading enterprises. Today practically every collective has a plan of economic and social development.

But, unfortunately, in the realization of these plans our enterprises are encountering the particular position of the same USSR Ministry of Nonferrous Metallurgy, Ministry of Construction of Heavy Industry Enterprises and Ministry of Petroleum-Refining and Petrochemical Industry, which in attempting to economize precisely on housing, kindergartens and schools are losing in the drawn-out assimilation of new production capacity, difficulties in the creation of new worker collectives and the big personnel turnover.

Of course, the problem of the efficient use of labor resources under Siberian conditions is complex and multifaceted. Ultimately an improvement in the entire system of planning and management boils down to the problem of the careful use of manpower. A recent Krasnoyarsk Kraykom plenum comprehensively discussed the party organizations' tasks for a refinement of the economic mechanism and an improvement in the use of labor resources.

The kray scientific-practical conference "Ways To Reduce Losses of Work Time in Sectors of the National Economy" is being prepared.

Big tasks confront the kray's workers. They are determined by the decisions of the 26th CPSU Congress and CPSU Central Committee plenums and in the CPSU Central Committee and USSR Council of Ministers' decree "Measures for the Further Comprehensive Development in 1981-1990 of the Production Forces of Krasnoyarsk Kray". This most important document is new testimony to the concern of the party and the government for the accelerated growth of the economic potential of the country's eastern regions.

Fundamental Changes

Novosibirsk IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR. SERIYA OBSHCHESTVENNYKH NAUK in Russian No 4, 1982 pp 60-70

[Article by B.P. Orlov: "Development of Siberia's Economy at Individual Stages of Socialist Building"]

[Text] Industrial forms of the economy emerged in Siberia and the Far East far later than in the European part of Russia and on the eve of the October Revolution were in an embryonic state. The natural resources of this most vast zone were used almost exclusively in agricultural production and in the small-scale pursuits (fishing, hunting) connected therewith. It accounted for 78 percent of the total product of Siberia's agriculture and large-scale industry (58 percent in Russia on average in 1913).*

The rapid growth of agriculture was stimulated by the abundance of land in the sparsely settled region which Siberia was and the existence of a relatively favorable social environment for the peasantry. The agrarian development of the boundless expanses of Siberia in the era of capitalism had an important singularity: it was not connected with semiserfdom manorial land tenure; the territories which proved subsequently to be within the zone of influence of the Trans-Siberian Railroad had even prior to the end of the 19th century become a target of free peasant colonization, which assumed the greatest dimensions after 1906, which was a consequence of Stolypin's agrarian reform. Siberia was characterized, as V.I. Lenin put it, by the "American way" of the bourgeois evolution of farming. A large number of individual-farmer-type farms emerged on the fertile land of the Altay, Irtysh and Yenisey region. Class stratification of the countryside occurred very rapidly.

* "Ekonomicheskiye problemy razvitiya Sibiri" [Economic Problems of Siberia's Development], Novosibirsk, Nauka, 1974, p 9.

The individual-farmer-type farm was comparatively large and produced mainly for the market. Agricultural implements, particularly intricate ones, were employed on a far greater scale on the peasant farms of Siberia than in other parts of the country. Siberia had 200 head of livestock per 100 inhabitants, while Russia's central provinces had only 60 head. The Siberian peasant farm soon established close relations with big capital, including banking capital.

The rate of development of Siberia's agricultural production considerably surpassed the all-Russian rate. In a few decades of capitalist development Siberia became one of Russia's main commercial farming and stockbreeding regions. Grain farming and butter manufacturing were the most developed sectors. The cereals' harvest in Siberia in 1913 amounted to 4.5 million tons or 5.3 percent of the all-Russian gross harvest, and Siberia's share of the harvest of wheat here--the region's main food crop--constituted 8 percent. The celebrated Siberian butter was consumed not only in Russia but was also exported in large quantities. Annual butter exports in the period 1909-1913 from Siberia constituted 62,200 tons (from Denmark 88,700 tons, from Australia 35,100 tons).

The most developed sector was the food industry: in 1912 it accounted for 54.7 percent of Siberia's gross industrial product--far higher than in the country as a whole.* This was brought about by the high marketability of the agriculture and the developed state of fishing. In the development of light industry, however, Siberia was below the all-Russian level. For this reason in the consumption of light industry products Siberia depended almost entirely on imported commodities from the European parts of Russia. Industry producing producer goods occupied a subordinate position in relation to industry manufacturing consumer goods and incorporated principally the primary sectors (production of mineral resources). On the eve of WWI Siberia's extractive industry produced roughly one-third of the entire industrial product.**

The Siberian bourgeoisie preferred to industrial enterprise a more profitable sphere of the application of capital--trade. This factor explains to a considerable extent Siberia's low relative significance in Russia's industrial product: in 1913 it constituted only 2.9 percent (with regard for the Far East).***

WWI and the civil war inflicted considerable losses on Siberia's production forces. The material damage caused to Siberia's economy was far in excess of the value of the annual agricultural and industrial product in the prewar period. Tremendous efforts on the part of the Soviet people were required to do away with the economic devastation.

* "Economic Problems of Siberia's Development," pp 10-11.

** Ibid., p 11.

*** EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA No 5, 1977, p 61.

Following the civil war, it took 6 years to restore Siberia's economy. The countryside made good the losses of wartime relatively quickly. Siberia's agriculture passed the 1913 production level in 1926. The restoration of Siberia's industry was completed in 1927.

The restoration period made no appreciable changes to the structure of Siberia's economy: agriculture in 1927 produced approximately three-fourths and industry somewhat more than one-fourth of the total product of these two main spheres of material production. For the USSR the share of agriculture in 1928 was 49 percent, that of industry 51 percent.*

Formation of the new structure of Siberia's economy began with the USSR's embarkation on the period of accelerated industrialization. It was necessary in the course thereof to strive for a more rational location of the country's production forces, particularly by way of their accelerated growth in the eastern regions. Accomplishment of the tasks of industrialization required the extensive enlistment of Siberia's natural resources in the national economic turnover.

The Initial Period of Industrialization and the Influence of the War on Production

As shown by an analysis of the concepts of impending economic development, whose propositions were taken into account in the development of medium-term and long-term plans and projects and also their specific purposes, the USSR's eastern zone, including Siberia, has been given priority over the European parts of the country in economic growth rate in almost every plan period. Implementation of this policy led to an increase in the share of Siberia and the Far East in the gross product of the USSR's large-scale industry from 3.2 percent in 1927-1928 to 5.2 percent in 1939, and, furthermore, the relative significance of Western Siberia grew in this time from 1.4 to 2.5 percent.**

Realization of the Ural-Kuznetsk project, which was the basis of the first major economic act undertaken in the USSR's East, became of decisive significance in Siberia's industrialization. This multipurpose act was of a long-term nature and exerted a manifold influence on the development of the production forces over a vast territory of the country. The Ural-Kuznetsk Works (UKK) was the first interregional production complex in the period of socialist building and was based on the interconnected use of the resources of the Urals and Bashkiria, Western Siberia and Northeast Kazakhstan. The UKK was regarded as a combination of sectors constituting (together with the heavy industry of the old industrial centers) the production basis of the industrialization of the economy of the Urals and the country's eastern regions: ferrous and nonferrous metallurgy, coal industry and power engineering and chemical industry and engineering, primarily mining-

* "Economic Problems of Siberia's Development," p 13.

** "Tendentsii ekonomicheskogo razvitiya Sibiri (1961-1975)" [Siberia's Economic Development Trends (1961-1975)], Novosibirsk, Nauka, 1980, p 44.

metallurgical, transport and electrical. This was a new form of the territorial organization of production making it possible to combine the comprehensive development of the production forces of the new regions with the extensive pooling of their economic activity. The UKK's production capacity served as the material-technical base of the plan-oriented advance of industry toward the East and the removal of its economic backwardness.

A capital-intensive variant of industrial development was implemented in Siberia in the prewar period: the growth of investments in the production machinery considerably outstripped the increase in industrial output. This correlation was explained, first, by the pioneer nature of the development of the territory, which caused a high proportion of expenditure in the infrastructure, which did not directly influence the volume of the gross product; second, by the complicated natural-climatic conditions of the construction and operation of industrial facilities; and, third, by the higher than usual role in the production structure of capital-intensive sectors of industry (coal, timber and so forth). Specialization in the production of fuel and raw materials advanced to the forward positions in this region's industrial structure the initial stages of material production: in 1937 the fuel industry and timber logging and ferrous and nonferrous metallurgy accounted for 24.6 percent of the gross industrial product of Siberia and the Far East and 12.8 percent on average in the USSR.

The accelerated industrialization of the country's East was also provided for on the eve of the Great Patriotic War. Thus in the preparation in 1941 of the basic provisions of the USSR's material economic plan for 1943-1957 the USSR Gosplan planned to increase the share of the eastern zone, including the Urals, in all-union industrial production twofold--from 14.8 percent in 1939 to 29-30 percent in 1957, including the relative significance of the Urals, Siberia and the Far East from 11.4 to 24 percent.* However, the Hitlerites' aggression temporarily interrupted the implementation of these intentions.

One of the USSR's principal military-industrial centers took shape in Western Siberia in the war years. The main role here was performed by the relocation in Siberia of the production capacity of the engineering enterprises of the country's European regions. Tractor and combine building arose here, and the production of ball bearings, new types of machine tools, motorcycles, tools and instruments was assimilated. The sectors which formed the military consumption stock (engineering and metal working and certain group "B" facilities manufacturing uniforms and so forth) occupied the dominant position in industry. The introduction of new capacity and the intensification of production processes made it possible to sharply increase the manufacture of ferrous metals. Aluminum and nickel industry arose in Siberia.

The war had a contradictory influence on Siberia's economic growth. On the one hand the relocation of some of the production machinery of industry,

* "Siberia's Economic Development Trends...", p 45.

construction and transport from the European parts of the USSR to the Asian parts led to an increase in this machinery in Siberia, which brought about a further rise in its share of the country's industrial production. On the other, this factor exerted only a short-term influence on the industrial growth rate. The resources of the final and intermediate product of the national economy had to be redistributed between the eastern and western zones in order to restore the economy of the European regions which had suffered from the war and embark on the industrialization of new territories (the Baltic). In the period 1946-1950 Siberia's share of the capital investments of the state and cooperative system (excluding the kolkhozes) declined to 8.5 percent compared with 10.2 percent in the war period.* Consequently, there was a relative decline in expenditure on the buildup of Siberia's economic potential. Considerable resources were spent here not on new construction but on reconstructive work, which did not increase production capacity (the replacement of the temporary infrastructural installations of wartime with capital installations, the completion of production structures and the replacement of obsolete equipment), and also on the reorganization of production in connection with the reconversion of industry.

For this reason up to the mid-1950's it was possible to secure only a small increase in industrial output in Siberia thanks to a buildup of the production machinery as a principal extensive factor of an increase therein. At the same time the above-mentioned reconversion strongly influenced the dynamics of production, and it was reflected to the greatest extent, furthermore, in the dynamics of production in Western Siberia. The close connection of its economy with defense production was the reason for the length of industry's transition to the manufacture of civilian products: profound changes were needed in intersectorial and territorial relations, in production techniques and in the organization of social labor. The complexity and lengthiness of the process of the postwar reconversion of engineering explains the reduction in production in the areas of Siberia where this sector occupied almost a monopoly position in industrial production. Thus in the period 1946-1950 the gross industrial product of Novosibirsk Oblast declined 4 percent and that of Omsk Oblast 5 percent.

For this reason in the first postwar period, as distinct from the prewar period, Siberia's industry increased the manufacture of products more slowly than the USSR as a whole, as a result of which there was a considerable decline in the region's share of all-union production. The average annual rate of increase of the gross industrial product (percentage) testifies to this:**

* "Siberia's Economic Development Trends...", p 46.

** Ibid., p 47.

	1946-1950	1951-1955	1956-1960
USSR	13.6	13	10.4
Western Siberia	3	12.4	10.2
Eastern Siberia	9.4	11.2	11.7

As we can see, a different correlation in the production growth rate in the industry of Siberia and the country as a whole takes shape as of the mid-1950's. In accordance with the instructions of the 19th CPSU Congress, realization of the Angar-Yenisey project, which provided for the creation in Eastern Siberia on the basis of cheap energy resources and mineral and vegetable raw material of territorial-production combinations--complexes and industrial centers--began at this time. This project, which had been developed even before the war and supplemented with new ideas after it, was the basis of the second--after the Ural-Kuznetsk Works--long-term investment act, which marked a further shift in the production forces eastward and pulled new parts of Siberia into the orbit of intensive economic development.

Solution of the Angar-Yenisey problem lent strong impetus to the development of the production forces of Krasnoyarsk Kray and Irkutsk Oblast and stimulated the economic growth of the Trans-Baykal area. Furthermore, the development of Eastern Siberia's transport network improved transport-economic relations with the Yakutsk ASSR. An appreciable role in Western Siberia's economic development was performed by the involvement of vast tracts of virgin land in the agricultural turnover in the mid-1950's.

Basic Changes in the Economy in the Period 1961-1975

In the 1960's the rate of Siberia's economic growth was higher than that of the USSR as a whole, which may be judged from the data of intersectorial balance sheets of the production and consumption of products and from other indicators. Thus the net product of Siberia's economy had increased 69 percent in 1972 compared with 1966, whereas the USSR's derived national income had grown 47 percent. The said preferential growth was maintained in subsequent years. Siberia's share of all-union capital investments grew from 10.9 percent in 1966-1970 to 11.6 percent in 1971-1975.

We will cite certain indicators of gross output embracing a longer period. Thus Siberia's gross industrial product in the period 1961-1975 increased by a factor of 3.5 and the USSR's industry by a factor of 3.2. For this reason Siberia's share of the all-union industrial product increased somewhat, reaching 8.9 percent in 1975 (compared with 7.6 percent in 1960).^{*} There was an increase here in Siberia's role in the formation of the all-union fuel-raw material resource balances--coal, oil, natural gas, wood and products of its processing and nonferrous metals. The development of the fuel industry and the creation of large-scale hydraulic engineering prepared the basis for the growth of energy-consuming works--the smelting of aluminum and ferroalloys,

* "Siberia's Economic Development Trends...", pp 48-49.

electrochemistry and the heavy processing of hydrocarbon and wood raw material. In the 10th Five-Year Plan Siberia's positions in the all-union production of source raw material and energy-consuming materials strengthened.

At the same time Siberia's share of the USSR's agricultural production declined (the gross agricultural product in annual average terms increased 13 percent in the period 1971-1975 compared with 1966-1970 in the USSR and 10.5 percent in Siberia,* although the opportunities for an increase in production had increased sharply here thanks to the plowing of the virgin land in the 1950's). This phenomenon should be connected with the greater frequency of droughts than in the USSR as a whole and regarded as a result of the deterioration in Siberian agriculture's provision with labor, which is not being compensated by an increase in its provision with capital and the enlistment in the harvesting and transportation of the harvest of equipment and manpower of the nonagricultural sectors.

There were no appreciable changes in the period in question in the role of Siberia's transport system in the country. In the Seventh Five-Year Plan the share of Siberia's transport system in the all-union operation of transport declined. The decline occurred because the rate of growth of shipments by gas main and motor and railroad transport was less here at the start of the 1960's than in the country as a whole. In the Eighth Five-Year Plan freight shipments in Siberia began to grow at a preferential rate. The shipment of gas by pipeline and transportation of freight on the railroads of Siberia increased more rapidly than in other parts of the country.

The relative significance of railroads remained comparatively stable: there was no increasing preferential development in Siberia of this form of transport. The share of the river docks increased somewhat. There was an appreciable increase in the country in the role of Siberia's pipeline transportation. The share of Siberia's motor transport in the operation of the country's motor transport declined, this being the sole form of transport which lagged behind the average rate which had been achieved in the country.

Prior to the latter half of the 1960's Eastern Siberia had outstripped Western Siberia in the rate of increase in investments: realization of the Angar-Yenisey project had begun in the mid-1950's. However, recently Western Siberia has assumed the leading positions. The country's main oil center has been created and the main center of the extraction of natural gas is taking shape on its territory. In the period 1971-1975 capital investments in the economy of Western Siberia grew 62.4 percent and in Eastern Siberia 36.5 percent compared with the Eighth Five-Year Plan.

It is essential to mention the strongly expressed concentration of investment activity in two administrative regions of Siberia: Tyumen Oblast and Krasnoyarsk Kray. On the other hand, investment activity has been only barely

* "Siberia's Economic Development Trends...", p 49.

active and limited in the southern zone of Western Siberia and in the Trans-Baykal area. The first of these regions (Altay Kray and Kemerovo and Novosibirsk oblasts) have quite a developed industry and agriculture, and a strong influx of investments here is possible only given an orientation toward an appreciable change in the evolved structure of industry, mainly by way of the creation of new engineering sectors, primarily those producing equipment for the sectors of the region's specialization (oil, gas and chemical industry) and also auto assembly. The Trans-Baykal area, however, has fewer possibilities than the Angar-Yenisey region for the development of energy- and metal-consuming production facilities and also a timber industry complex.

Siberia's industrial growth in the 1950's was connected with the preservation of the former production structure which had taken shape in the initial period of industrialization. In the 1960's, however, the development of Siberia's industry came to be determined increasingly by the sectors which had been advanced to the forward positions by technical progress and which had taken shape here as large-scale production facilities since the war (electric power engineering, petroleum refining and the chemistry of organic synthesis, the smelting of aluminum and other nonferrous and rare metals, the pulp and paper industry and new engineering sectors). On the other hand, the traditional industrial sectors which had evolved prior to the war (coal, timber and wood-processing) increased output comparatively slowly.

After the Fifth Five-Year Plan (1951-1955) the average annual rate of increase in Siberia's gross industrial product declined from period to period. Having achieved the maximum value (12 percent) in the said 5-year plan, it declined to 8 percent in 1971-1975. This picture is close to the all-union dynamics of production and is explained, evidently, by similar circumstances.

In the period in question the high rate of growth of gross output was typical of a comparatively narrow circle of sectors of Siberian industry. These were almost exclusively initial stages of material production--oil and gas industry and nonferrous metallurgy--connected mainly with non-Siberian consumers and being very limited participants in the formation of the material resources of reproduction for Siberia itself.

In the said sectors of industry the directive of the 24th CPSU Congress concerning the achievement of a high rate of production growth was fulfilled constantly.

In Siberia's timber industry complex production of the final product increased to a greater extent than the manufacture of the initial and intermediate product, but this exerted only a feeble influence on the overall production growth rate owing to the negligible role in the composition of this complex of enterprises for the heavy processing of raw material. Such enterprises came to be created in Siberia comparatively recently, and, furthermore, their capacity was built up slowly, disproportionate to the increase in the volume of procurement of the raw material. For this reason the structure of the timber industry complex in Siberia remained less rational than in a number of timber-processing regions (in the Volga area and the North Caucasus, for example).

Approximately half of the production of Siberia's timber industry complex was accounted for by the procurement of wood, and only one-eighth by pulp and paper industry. The proportion of the total production of furniture industry is also comparatively low: the relative significance of this sector in the gross product of the entire complex in Western Siberia is approximately half that of the North Caucasus.

In the production of timber products Siberia specialized, as before, in raw material and products of its primary processing (lumber, mine props, cross ties and so forth) and exported them in increasingly large amounts to remote areas. Given an increase in the procurement of commercial timber of 42 percent, the volume of round timber exports to the European part of the country, Kazakhstan and Central Asia in the 1960's doubled, reaching 15 million cubic meters, which brought about an increase in transportation expenditure and a reduction in the railroads' traffic capacity reserves.*

The dynamics of production in engineering and chemical and petrochemical industry, which occupy strong positions in Siberia's industrial structure, attracts particular attention. In the past these sectors--leaders of technical progress--strongly outpaced industry as a whole in production growth, but as of the end of the 1960's the rate of growth of their production in Siberia has been at the all-industry level or a little above it.

We would note the important changes in the structure of the basic sectors of Siberia's industry. In the fuel industry the production processes which are non-labor-intensive and less capital-intensive than coal production emerged in the preferential positions: in Western Siberia the oil and gas industry as of 1 January 1976 accounted for approximately half of the value of the fuel industry's fixed production capital and the coal industry accounted for somewhat more than two-fifths of this value (more than four-fifths in 1967). The relative significance of Siberia in the gross product of the USSR's fuel industry rose from 14 percent in 1965 to 20 percent in 1974, and, furthermore, in oil-producing industry Siberia's share grew to 23.7 percent. Although the production of oil and gas was started almost simultaneously, the oil base was formed in the West Siberian lowland far more quickly than the gas base: in 1975 the productiveness of the first (in oil equivalent) exceeded the "yield" of the second fourfold.**

There was an increase in the role of aluminum industry in Siberia's nonferrous metallurgy; the proportion of pulp and paper industry increased in the timber industry complex; and there was an increase in the significance of petrochemistry in chemical production. Implementation of the policy of accelerated development in the eastern zone of the pulp and paper industry led to the increased significance of Siberia and the Far East in the all-union production of this sector: one-fourth of all pulp was being produced here in 1975.

* "Siberia's Economic Development Trends...", p 57.

** Ibid., p 59.

The said changes express an orientation toward an intensification of the processing of raw material by way of the creation of new maximum capacity and distinctive "upper stories" of industry built onto its "lower story"--the initial stages of production. This progressive trend will in all probability be maintained in the future also.

The changes in the sectorial structure of Siberia's industry have not in all instances coincided with the corresponding modification of the USSR's industrial structure. Thus in the country as a whole the relative significance of the fuel industry declined from 7.7 percent in 1960 to 5.5 percent in 1974, but in Siberia it increased somewhat. The proportion of nonferrous metallurgy in Siberia's gross industrial product grew appreciably, whereas in the country as a whole this was not the case. The proportion of sectors of the timber industry complex in the USSR as a whole declined to a considerably greater extent than in Siberia, and for this reason its relative significance in all-union production increased from 12.4 percent in 1965 to 14.2 percent in 1975.* The said differences in the change in sectorial structure are legitimate if one takes account of Siberia's role in the formation of the country's fuel and raw material balances. Thus Siberia's relative significance in the gross product of the USSR's fuel industry, the all-union nonferrous metallurgical product, in wood and lumber production and so forth has risen steadily.

The relative significance of electric power engineering, chemical and petrochemical industry, engineering and metal working in the USSR's gross industrial product increased from 23 percent in 1960 to 36.5 percent in 1974 and in Siberia, according to our calculations, from 24 to 36 percent. The proportion of electric power engineering and chemical industry in Siberia's gross industrial product here was considerably higher than in the USSR as a whole, but the proportion of engineering was lower. These differences reflected Siberia's high provision with natural resources and the territorial division of labor which had evolved in the USSR.

The sectorial complexes functioning in Siberia's industry differ appreciably from the all-union complexes in the direction of a greater role of the procurement processes and the lesser significance of the processing facilities. Thus according to our calculations, in the USSR's fuel complex in 1974 the oil production and coal industry accounted for 57 percent of the value of its product, but in Siberia 75 percent.** Siberia's timber industry complex was also less oriented toward the heavy processing of raw material than the all-union complex. Such correlations could not in principle have been considered rational since an intensification of the degree of raw material processing in Siberia would have produced bigger economic results.

Thus a policy was implemented in the period in question of the accelerated development of Siberia's production forces, which was secured by way of the realization of long-term national economic projects. Their specific purposes,

* "Siberia's Economic Development Trends....," pp 58-59.

** Ibid., p 59.

which ensued from all-state tasks, brought a number of sectors of Siberian industry--oil and gas, nonferrous metallurgy, petrochemistry and the pulp and paper industry--to the leading positions. Progressive production-engineering solutions and new implements of labor were employed extensively and a high level of production concentration was achieved here, which conditioned the favorable dynamics of specific expenditure on the manufacture of products.

As a result of the increased capacity of the production machinery Siberia joined the group of most developed regions of the USSR, evidence of which is the change in the indicator of the total product of the material production sphere in Siberia, which by the mid-1970's was greater than the total production in Kazakhstan and the Central Asian republics. A strengthening of Siberia's economic potential was achieved as a whole, and its role in all-union production increased.

Current Stage of the Development of the Production Forces

In accordance with the 10th Five-Year Plan, a considerable preference in the development of Siberia's industry compared with the country's industry was outlined.

The gap between the planned and actual rates of increase in the industrial product in Siberia proved greater than on average for the country. A similar phenomenon had been observed in the Ninth Five-Year Plan also. This prompts the thought that the factors causing the actual trajectory of industrial development to deviate from the planned trajectory operate more strongly in Siberia. A representative analysis of the above-mentioned factors has not yet been made. However, frequent breakdowns in the operation of transport and a shortage of electric power in Siberia may be noted, inter alia.

As a result the production growth rate in Siberia has approximated the all-union rate. This trend will, evidently, be maintained in the 11th Five-Year Plan.

The leading sectors of Siberian industry, which are characterized by a comparatively high rate of production growth and which determine the region's place in the all-union division of labor, were in the 10th Five-Year Plan, as earlier also, oil and gas industry, nonferrous metallurgy and the pulp industry. Siberia's share of the all-union production of oil and gas condensate in 1980 was over half. Siberia provided one-third of the coal and natural gas produced in the country and one-fourth of procured wood. The region's relative significance in the all-union production of copper, nickel, aluminum and pulp is high.

The relative significance of the extractive industry in the gross product of all industry in Siberia is twice as high as in the USSR. The sectors of industry, however, manufacturing the bulk of the final product (engineering and light and food industry) are in Siberia of appreciably less relative significance than USSR industry.

A number of specific conditions (the extreme nature of the natural environment compared with the majority of other parts of the country, the length of the haulage distances, additional expenditure on wages and others) bring about the higher than usual capital-intensiveness of the net product: Siberia's share of the all-union capital investments fund in the latter half of the 1970's amounted to 12 percent (approximately 10 percent in the USSR's national income in 1980).

Since the start of the 1970's the areas of the greatest investment activeness in Siberia have been Tyumen Oblast and Krasnoyarsk Kray. In the period 1976-1980 half of the capital invested correspondingly in Western and Eastern Siberia was invested here. In Tyumen Oblast the overwhelming proportion of the capital was invested in the creation and development of the country's main oil center in the Central Ob' region and the formation of the main center for natural gas extraction in the Lower Ob' region. In Krasnoyarsk Kray the main investment flows were connected with the development of the Noril'sk industrial center and the formation of the Sayanskiy territorial-production complex.

In the 1970's Siberia began to develop into the country's main fuel-energy base. The accelerated growth of the oil and gas industry made it possible to sharply increase the region's relative significance in the all-union production of fuel-energy resources: according to the calculations of Yu.I. Maksimov, it grew from 11.2 percent in 1965 and 14.2 percent in 1970 to 26 percent in 1975 and 43.2 percent in 1980.* Siberia now produces more fuel than the European part of the USSR (including the Urals), although lags behind it considerably in its consumption.

The said achievement may be considered a most important result of Siberia's industrial development in the period 1971-1980 and the main "process stock" determining its economic growth in the 1980's.

Approximately two-thirds of the fuel produced in Siberia is transferred to the European part of the country (including in Urals). The increase in the transfer of fuel from the eastern zone of the country to the western zone is of an abrupt nature: in 1976-1980 it increased by a factor of more than 2.5 and was in excess of 500 million tons (in standard fuel).

Siberia's role in the formation of the country's fuel-energy balance will increase in the 11th Five-Year Plan: its relative significance in oil production will rise from 52 percent in 1980 to 62 percent in 1985 and in gas extraction from 36 to 53 percent. The production of hydrocarbons will almost double in 1981-1985 compared with 1976-1980. Siberia's share of all-union coal production will also increase considerably. Under the objective conditions which have evolved this will inevitably lead to the further

* Yu.I. Maksimov, "Extraction of Fuel-Energy Resources in Siberia," IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR No 6, 1982. Social Science Series, issue 2.

concentration of capital investments in Siberia in the sectors of the fuel-energy complex, primarily within the confines of the West Siberian oil and gas complex, which will limit the influx of investments in other spheres of the economy. Thus in accordance with the 11th Five-Year Plan, capital investments in the oil and gas complex will double compared with the 10th Five-Year Plan. Practically almost all the additional capital investments allocated Western Siberia in the 11th Five-Year Plan (compared with the 10th) are intended for this complex. The accelerated growth in Siberia of the chemical and petrochemical, pulp and paper, wood-processing and microbiological industry is provided for in the 1981-1985 plan together with the fuel industry.

If we proceed from the evolved trends and the list of priority capital construction projects, we should anticipate in the 11th Five-Year Plan a further increase in the relative significance of Tyumen Oblast and Krasnoyarsk Kray in Siberia's industrial development (we would note in this connection that the formation of the Kansk-Achinsk fuel-energy complex has begun in Krasnoyarsk Kray). The delay (compared with the deadlines outlined previously) in the presentation for constant operation of the Baykal-Amur Main Railroad and the absence of completed planning studies practically rule out the possibility of the extensive economic development of the Baykal-Amur Main Railroad zone in the confines of the Trans-Baykal area.

The 1980's will be characterized by an increased shortage of resources for accumulation and a sharp slackening of the influx of labor resources in the national economy (the increase in the population of able-bodied age will decline approximately fourfold compared with the previous decade). It is difficult even now to imagine specifically all the consequences for Siberia of a sharp deterioration in the dynamics of these two basic production factors since the USSR national economy has not hitherto functioned under the conditions of such rigid limitations on investment and labor. To these should also be added the food difficulties and the deteriorating social "background" of economic growth.

A logical analysis makes it possible to outline three possible alternatives of Siberia's economic development in the 1980's, which may be regarded as a kind of image of scenarios of the future.

Scenario 1 is the further concentration of efforts on the development in Siberia of the all-union fuel-energy and raw material bases with the predominant orientation of their products toward exports to the European part of the country (including the Urals) and the relatively slight growth in Siberia of processing facilities. This is the least efficient variant of the development of Siberia's production forces leading to a disproportionate increase in transportation expenditure and impeding the comprehensive use of the primary and intermediate product of material production.

Scenario 2 presupposes the greater development in Siberia of conversion facilities using local natural materials, primarily energy-intensive, power-intensive and water-intensive (petroleum-refining, petrochemical and chemical industry, ready rolled ferrous and nonferrous metal production and pulp and paper, wood-processing and microbiological industry). This variant

presupposes an extension of the list of sectors of all-union specialization and an increase in Siberia's contribution to the formation of the all-union balances of the intermediate and finished product. Production efficiency here increases thanks to the comprehensive use of raw material and a relative reduction in transport expenditure.

Scenario 3 envisages the more even development in Siberia together with the modern sectors of its all-union specialization and heavy processing of local raw material (for exports from the region of intermediate products and finished products included) of the sectors producing the final product (machinery, equipment and consumer goods). This variant will require a tremendous exertion of effort and could (under the evolved conditions) be regarded as less feasible than the second.

With regard for the big time lag in the territorial proportions of the national economy which have taken shape, the growing strain of the capital investment and labor resource balances in the country as a whole and the adopted orientation toward the preferential modernization and replacement of the existing production machinery it may be expected that initially the development of Siberia's production forces will gravitate more toward the first variant than the second and that subsequently, as the said limitations ease, favorable conditions will emerge for development in accordance with the second variant.

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Tenth Five-Year Plan Indicators

Novosibirsk IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR. SERIYA OBSHCHESTVENNYKH NAUK in Russian No 4, 1982 pp 71-76

[Article by T.B. Baranova: "Basic Indicators of the Development of Siberia's Industry in the 10th Five-Year Plan"]

[Text] In the 10th Five-Year Plan Siberia's industry developed at a higher rate than USSR industry as a whole, although the production growth rate in Siberia, as in the country as a whole, declined compared with the corresponding indicators in the Seventh-Ninth five-year plans. The relative significance of Siberia in all-union industrial production had increased by 0.2 percentage points by 1980 compared with 1975 (see table 2). Inasmuch as the source base exerts a big influence on the value of Siberia's relative significance in all-union production Siberia's increasing role in the development of USSR industrial production is reflected more fully in the indicators of Siberia's relative significance in industrial production increases. Siberia's relative significance in the increase in the USSR's gross industrial product in the 10th Five-Year Plan was 0.9 percentage points higher than this indicator in the Ninth Five-Year Plan.

If the indicator of industrial production per capita is used to characterize the level of industrial development, it may be observed that a qualitative change in Siberia's position among the USSR regions occurred in the Eighth Five-Year Plan: more gross industrial products per capita came to be produced in Siberia than on average in the country.* In 1975 some 12.3 percent more industrial products per capita were produced in Siberia than on average in the USSR. In the 10th Five-Year Plan this gap increased to 14.3 percent.

In the period 1976-1980 production grew to the greatest extent in Siberia in the fuel industry (by a factor of almost 1.5) and engineering (by a factor of approximately 1.4), and in chemical and light industry the gross product increased by a factor of more than 1.2. It was in these sectors in the 10th Five-Year Plan that production grew at a rate higher than the average industrial rate, and there was an increase in their proportion in all-union production (table 1).

Table 1. Changes in Industry's Sectorial Structure (in Gross Output), %

Industrial sector	Siberia		USSR	
	1975	1980	1975	1980
All industry	100	100	100	100
Electric power engineering	5.2	5.2	3	3
Fuel	14.4	17	6	5.6
Chemical and petrochemical	7.2	7.3	6.6	7
Engineering and metal working	21.3	23.4	24	28.7
Timber, wood-processing and pulp and paper	8.2	6.9	4.7	4.1
Construction materials industry	4	3.7	4.1	3.6
Light	10.5	10.6	16.7	15.9
Food	14.7	11.9	18.4	15.9
Other sectors	14.5	14	16.5	16.2

Note: Tables 1-3 were calculated by the author using the following works of reference: "USSR National Economy in 1980. Statistical Yearbook," Moscow, Statistika, 1981; "USSR National Economy in 1975. Statistical Yearbook," Moscow, Statistika, 1976; "RSFSR National Economy in 1980. Statistical Yearbook," Moscow, Statistika, 1981; "RSFSR National Economy in 1975. Statistical Yearbook," Moscow, 1976. See also T.B. Baranova, "Basic Indicators of Siberia's Industrial Development in the Seventh-Ninth Five-Year Plans," IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK No 1, 1979, Social Science Series, issue 1, pp 28-33; T.B. Baranova, "Dynamics of Employment, Labor Productivity and Fixed Production Capital in Siberia's Industry," IZV. SIB. OT. AKAD. NAUK SSSR No 6, 1980, Social Science Series, issue 2, pp 105-112.

Siberia's relative significance in the all-union increase in the fuel

* See "Sibir' v yedinom narodnokhozyaystvennom komplekse" [Siberia in the Single National Economic Complex], Novosibirsk, Nauka, 1980, p 27.

industry product increased from 40 percent in the Ninth Five-Year Plan to 59.3 percent in the 10th Five-Year Plan (table 2). As in the foregoing period, the most important result of the development of Siberia's fuel industry was the considerable increase in the production of oil and natural gas in West Siberia. Its role in catering for intra-union requirements and the formation of export supplies of these fuel-energy resources increased.

The relative significance of Siberia in all-union oil production in 1976-1980 increased by 21.7 percentage points and gas production by 23.5 percentage points (see table 3). Siberia had a particularly pronounced role in the all-union increases in the production of these products: thus in the 10th Five-Year Plan Siberia catered for the entire increase in oil production in the country, compensating for the decline in oil production in a number of areas.

In Siberia's machinebuilding the production growth rate in the 10th Five-Year Plan continued to slow. Just as in the Ninth Five-Year Plan, the region's share of the increase in all-union production in the 5-year plan was lower than the volume of production which was achieved. Siberian engineering has long been developing predominantly on the basis of enterprises created earlier without their fundamental modernization and change in specialization.*

In the 10th Five-Year Plan Siberia's chemical and petrochemical industry developed at a rate higher than the industry average, which led to an increase in its relative significance in the region's industrial production (see table 3), but the rate of increase of the gross product in this sector in Siberia remained lower than the union average in the 10th Five-Year Plan (as in the Eighth and Ninth).** Siberia's proportion in the increase in all-union production of the gross product of chemical and petrochemical industry in the 10th Five-Year Plan was lower than the proportion in the production volume achieved in 1980. Mineral fertilizer production declined, and the increase in the manufacture of synthetic resins and chemical fibers slowed. Undoubtedly, none of this corresponds to the region's resource-economic potential.

In the 10th Five-Year Plan the average annual rate of increase of production in Siberia's electric power engineering was below the industry average. The trend toward a decline in the rate of increase in production in this sector which was discerned in the Eighth Five-Year Plan has been maintained through the present. A trend toward a decline in Siberia's proportion in the increases in the all-union production of the gross product of this sector was discerned in the Eighth-10th five year plans. However, whereas in the previous 5-year plans the region's role in ensuring increases in all-union production in electric power engineering was higher than its relative significance in the production volumes which had been achieved, in the 10th Five-Year Plan Siberia's

* "Siberia in the Single National Economic Complex," p 32.

** Ibid., p 31.

relative significance in the increase in all-union production of the gross electric power engineering product was lower than its relative significance in the production volume achieved in 1980. The region's relative significance in the all-union production of electric power declined (see table 3). As a result Siberia forfeited the advantages of a region with considerable power capacity potential. This is an appreciable shortcoming in the development of Siberia's economic complex, in which electric power engineering is designed to play the part of a leading component, and the negative consequences of the evolved situation will not be of a short-term nature.

Siberia's Relative Significance in All-Union Production and Increases in the Gross Product of Industrial Sectors of the USSR, %. Table 2.

Industrial sector	Relative significance in gross product		Relative significance in increases in the gross product in 1976-1980
	1975	1980	
All industry	9	9.2	10.4
Electric power engineering	15.3	15	13.9
Fuel	21.1	26.7	59.3
Chemical and petrochemical	9.4	9.2	8.6
Engineering and metal working	7.7	7.4	6.6
Timber, wood-processing and pulp and paper	16	16	15.3
Construction materials industry	9	9.5	15.9
Light	5.4	5.9	8.7
Food	6.3	6	1.9

While not being a sector of specialization, Siberia's light industry maintained a relatively high rate of increase in production in the 10th Five-Year Plan also. In the 10th Five-Year Plan Siberia's relative significance in all-union production of the gross product and in the increase in the sector's output in the 5-year plan grew. Just as in the Ninth Five-Year Plan, in the 10th the gap between the relative significance in the increase in all-union production and the volume of production achieved in light industry by the end of the 5-year plan constituted 2.8 percentage points. Although the volume of the production of such types of product of the sector as cloth, linen underwear and outer knitwear and leather footwear increased, Siberia still did not reach the union-average level in the production of these products per capita.

The rate of increase in production in Siberia's construction materials industry, although appreciably lower in the 10th Five-Year Plan than in previous 5-year plans, was, nonetheless, markedly ahead of the union average. As a result the region's relative significance in the sector's all-union production increased, and there was a particular increase in the region's role in the increase in the

all-union production of the sector's product. Siberia's relative significance in the increase in the production of the sector's gross product in the 5-year plan was greater than its relative significance in the volume of production achieved in 1980 by 6.4 percentage points.

The dynamics of the development of Siberia's timber industry in the 10th Five-Year Plan were distinguished by appreciable singularities. Whereas in the foregoing period the rate of development of this sector of Siberian industry steadily exceeded the union average,* the average annual rate of increase in the sector's production in the 10th Five-Year Plan was lower than the union average. The region's role in the increase in all-union production declined. Just as in the country as a whole, there was a decline in Siberia in the absolute volumes of production in such types of production as the delivery of wood and lumber, although in the production of these types of product per capita Siberia still considerably outstrips the union-average level.

The rate of increase in Siberia's food industry product in the 10th Five-Year Plan declined compared with the Seventh-Ninth five-year plans. The average annual rate of increase in the sector's gross product in the 5-year plan proved lower than the union average. The region's relative significance in the volume and, particularly, in the increase in the volume of all-union production in the sector declined. The region's share of the volume and the increase in the volume of the production of certain types of the country's food industry product declined. The increase in Siberia's relative significance in meat production in 1980 compared with 1975 should be mentioned. The slow growth of the food industry is directly influencing the provision of the Siberian population with food products.

Table 3. Siberia's Relative Significance in All-Union Production and in the Increases in the 5-Year Plan in the Production of the Most Important Types of Industrial Product, %

Type of product	Relative significance in production		Relative significance in the increase in production	
	1975	1980	1971-1975	1976-1980
Electric power	16.1	15.9	16.5	14.9
Oil (including condensate)	30.1	51.8	83.2	146.5
Gas (including casing-head gas)	13.3	36.8	31.6	83.2
Coal	29	31.4	32.9	131.4
Mineral fertilizer	3.1	2.5	0.4	--
Synthetic resins	13	11.2	12.5	1.1
Synthetic and man-made fibers	11.4	11.2	8.7	10.7

* "Siberia in the Single National Economic Complex," p 32.

Wood delivery	25.9	26.4	83.2	--
Lumber	22.5	25.5	169.5	--
Precast ferroconcrete structures	7.7	8.1	12.4	13.5
Cement	9.6	9.8	8.4	15.1
Cloth, all types	3.1	4	2.8	12.1
Outerwear	6.2	5.9	4	--
Leather footwear	4.3	4.2	6.3	2.6
Meat (including category I byproducts)	7.6	8.2	5.4	--
Animal oil	9.6	9.3	15.8	3.7
Furniture	6.6	6.5	6.5	6.3

The uneven development of individual sectors led to changes in the sectorial structure of Siberian industry (table 3). The relative significance of the fuel industry and engineering in the gross industrial product increased in 1980 compared with 1975. There was a negligible increase in the share in the region's industrial production of such sectors as the chemical and light sectors and the construction materials industry. The relative significance of electric power engineering remained at the same level. The relative significance of the remaining sectors in the production of the region's gross industrial product accordingly declined.

The main structural singularity of the development of Siberian industry is the fact that its increasing preferential growth has been ensured thanks to the accelerated development of the sectors of a procurement profile, primarily subsectors of the fuel industry. For a long period now the growth rate of the gross product of extractive industry in Siberia has, as distinct from the all-union trend, been not that much inferior to the growth rate of processing industry, and in the Ninth Five-Year Plan extractive industry was slightly superior even.* In the 10th Five-Year Plan the preferential growth of Siberia's extractive industry was maintained: the production growth rate in extractive industry outstripped the production growth rate in processing industry by almost 9 percentage points (table 4). This led to an increase in extractive industry's share of the total volume of the region's industrial production. Whereas the region's relative significance in the production of the gross product of the country's processing industry increased very negligibly, in the production of the gross product of extractive industry it rose by almost 5 percentage points. There was a particular increase in Siberia's role in the increase in the all-union production of the gross extractive industry product: in the Ninth Five-Year Plan Siberia secured approximately one-third of this increase, and in the 10th the region's share doubled. In 1980 the production of the gross extractive industry product per capita in Siberia was more than three times higher than the union-average level.

* "Siberia in the Single National Economic Complex," p 29.

Table 4. Growth Rate of the Gross Product of Siberia's Extractive and Processing Industry in the 10th Five-Year Plan, %

	Annual rates of increase					Average annual rate of increase in the 5-year plan
	1976	1977	1978	1979	1980	
Extractive	3.1	7.3	7.5	6.4	5.1	5.8
Processing	4.5	7.1	4.8	2.3	3.4	4.4

The specific regional feature of Siberia's industrial development is that in recent years there has been a marked increase in Siberia's specialization in the production of fuel and raw material, with which it covers an ever increasing proportion of the increase in all-union requirements.

Whereas in USSR industry as a whole the accelerated development of engineering, chemical industry and so forth is observed, it is the accelerated growth of the fuel industry which is observed in Siberia, which is secured by its oil and gas subsectors.* In the 10th Five-Year Plan the influence of the accelerated development of the fuel industry (its oil and gas subsectors) on the overall growth rate of Siberian industry increased (table 5). Thus whereas in the Ninth Five-Year Plan with the exclusion of fuel industry the average annual rate of increase of Siberia's industrial production falls 0.4 percentage points and with the exclusion only of the oil industry 0.5 points, in the 10th Five-Year Plan with the exclusion of fuel industry it falls 0.6 percentage points and with the exclusion of oil and gas industry 0.9 points. For USSR industry this operation leads to a negligible increase in the average annual rate of increase in industrial production.

Table 5. Influence of the Development of Fuel (and Oil and Gas) Industry on the Rate of Increase in Siberia's Gross Industrial Product in the 10th Five-Year Plan, %

	Annual rate of increase					Annual average for 1976-1980
	1976	1977	1978	1979	1980	
All industry, excluding fuel	5.5	4.4	4.7	2.4	3.4	4.1
All industry, excluding oil and gas	5.4	4.2	4.3	2.2	3	3.8

The development of extractive and processing industry in Siberia differs appreciably from the all-union trend. In the 10th Five-Year Plan the average annual rate of increase in the numbers of industrial-production personnel and the value of industrial-production fixed capital in Siberia's processing industry was lower (by roughly 0.3 percentage points) than the union average, whereas the average annual rate of increase in the gross product and, correspondingly, labor productivity in the 5-year plan was higher in Siberia. Whereas at the end of the Ninth Five-Year Plan the level of labor

* "Siberia in the Single National Economic Complex," pp 29-30.

productivity in Siberia's processing industry was somewhat lower than the USSR average, by the end of the 10th Five-Year Plan it had already surpassed the union-average level. The output-capital ratio in Siberia's processing industry declined more slowly than on average in the country. As a result the gap between the level of the output-capital ratio in Siberia and the corresponding union-average indicator was reduced in the 10th Five-Year Plan.

In Siberia's extractive industry in the 10th Five-Year Plan the average annual rate of increase in the numbers of industrial-production personnel, the value of the industrial-production fixed capital and the gross product and also in the capital-worker ratio and labor productivity was higher than the rate of increase of the corresponding indicators in all of Siberia's industry and in the extractive and entire industry of the country as a whole. In 1975 the level of the capital-worker ratio in Siberia's extractive industry was lower than the union average, but in 1980 it was 6 percent higher than the union-average level. The gap in the levels of labor productivity in the extractive industry of Siberia and the USSR increased even more in the 10th Five-Year Plan. Whereas in 1975 production of the gross product per worker in Siberia's extractive industry was 1.3 times higher than the average for the country, in 1980 this indicator had increased by a factor of more than 1.5.

The capital-output ratio in Siberia's extractive industry declined in the 10th Five-Year Plan somewhat more quickly than in the USSR on average, which led to a reduction in the gap between these indicators. Nonetheless, the level of the capital-output ratio in Siberia's extractive industry in 1980 was more than 1.4 times higher than the corresponding union-average indicator. This testifies to the higher efficiency of Siberia's extractive industry compared with the union-average level.

Labor productivity grew at quite a high rate in Siberia's industry as a whole in the 10th Five-Year Plan, but there was a simultaneous decline in the capital-output ratio, and both these processes occurred in Siberia more rapidly than on average in the USSR. Consequently, Siberia's industry developed comparatively efficiently in terms of the labor factor and less efficiently from the viewpoint of the use of fixed production capital.

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